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Forest Survey Release No. 22

May 1954

AREA AND OWNERSHIP OF FOREST LAND IN SAN MATEO COUNTY, CALIFORNIA

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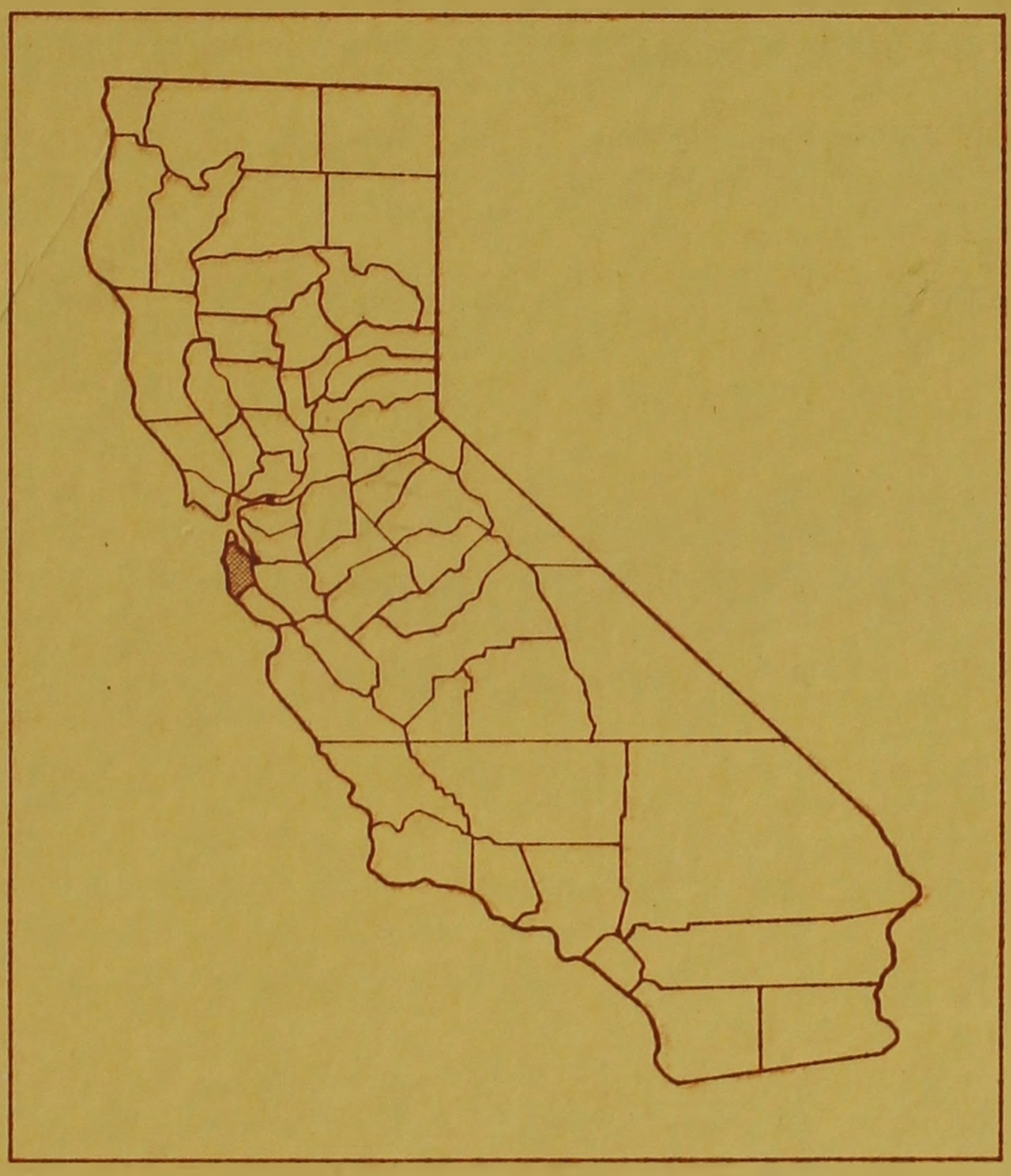

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
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ACKNOWLEDGMENTS

This report is from the Forest Survey and was prepared in cooperation with the Production Economics Research Branch, Agricultural Research Service, under the direction of E. V. Roberts, in charge of the Division of Forest Economics.

In the collection and preparation of the data in this report, the authors have had the cooperation and assistance of the following agencies and persons.

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Ownership survey questionnaires: State Forester and members of his staff

SAN MATEO COUNTY

Basic ownership data: County Assessor and Tax Collector

The ownership data presented in this report were the responsibility of the Production Economics Research Branch, Agricultural Research Service, U. S. Department of Agriculture.

The California Forest and Range Experiment Station is maintained at Berkeley in cooperation with the University of California

Agriculture--Berkeley

FOREWORD

The Forest Survey, authorized by the McSweeney-McNary Research Act of 1928, is a nationwide project of the Forest Service designed to provide a comprehensive survey of the forest resource of the United States. This Survey has the following primary objectives:

(1) To inventory all forest lands and the standing timber on those lands.

(2) To measure the current and probable future rate of timber growth and the productive capacity of the forest lands.

(3) To determine the rate of timber depletion through cutting, insects, disease, and other causes.

(4) To determine the present and expected requirements for lumber and other forest products.

(5) To provide, through correlation of these facts with one another and with other economic knowledge, a basis for formulating local, State, and national forest policies and management plans.

In California this work is the responsibility of the Division of Forest Economics of the California Forest and Range Experiment Station at Berkeley.

This report presents the statistics of forest areas and forest land ownership for San Mateo County, California as of 1948. Besides the facts about the extent, location, and condition of all forest lands and the timber stands on those lands, this release gives quantitative data as to the type of ownership, size of ownership, and number and kinds of owners. Estimates of timber volumes are not included because sampling was not designed to provide this information on areas as small as counties.

This report is the last in a series of county statistical reports presenting data on area and ownership of forest land in the Redwood--Douglas-fir subregion. County reports have already been published for Del Norte, Humboldt, Mendocino, Sonoma, and Santa Cruz counties.

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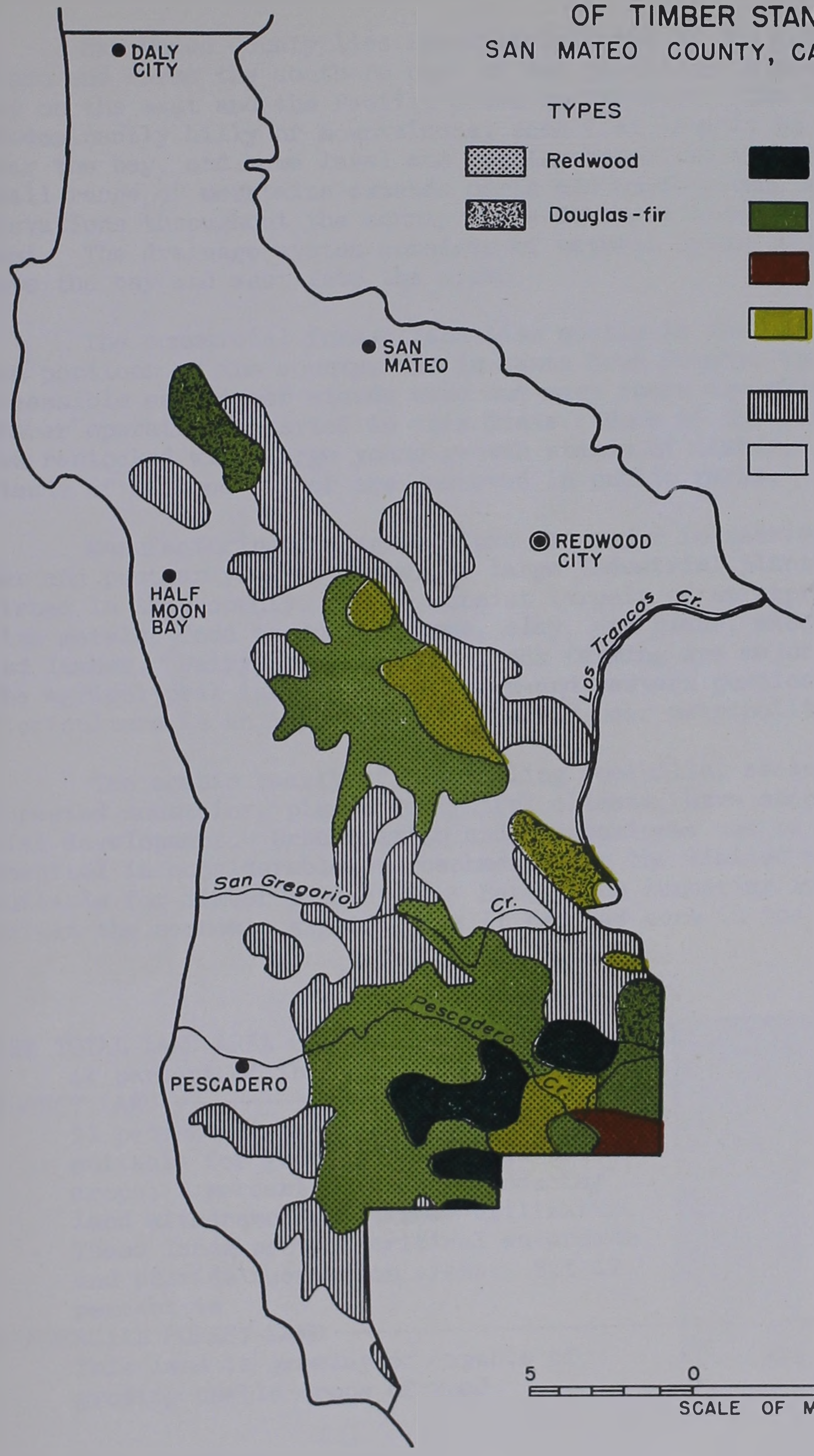
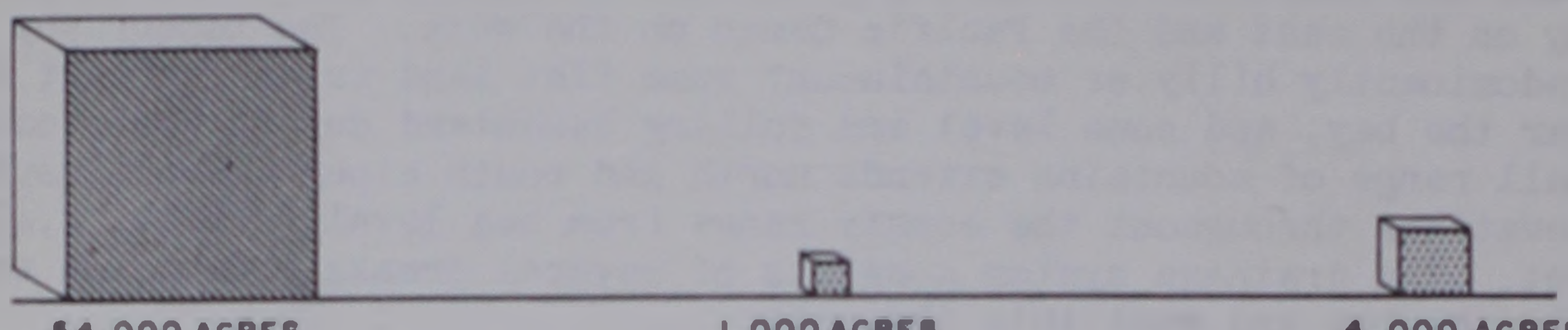
GENERALIZED TYPES AND AGE CLASSES OF TIMBER STANDS

SAN MATEO COUNTY, CALIFORNIA



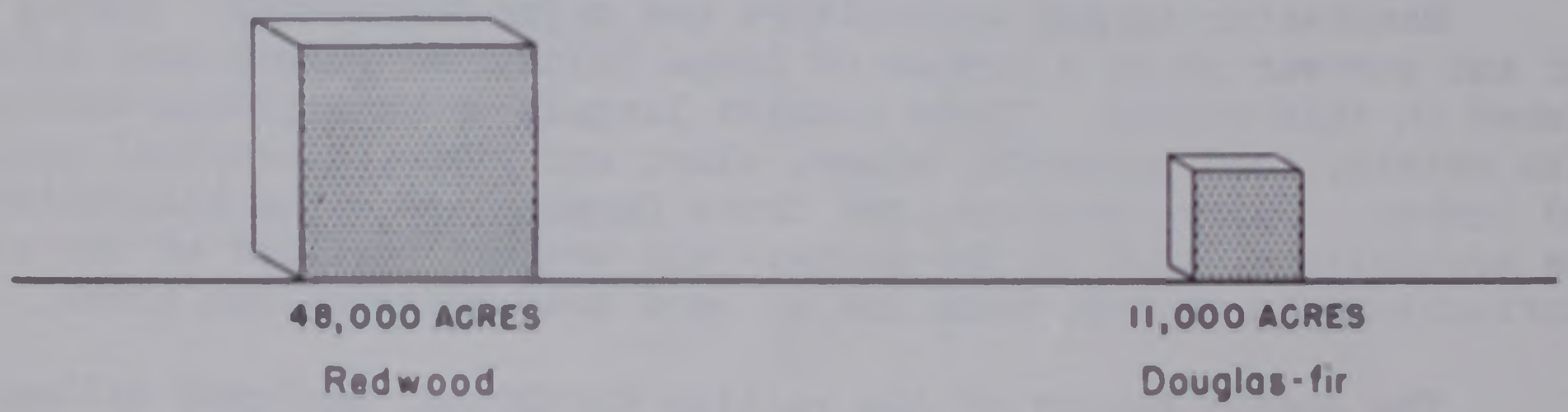
COMMERCIAL FOREST LAND

OWNERSHIP



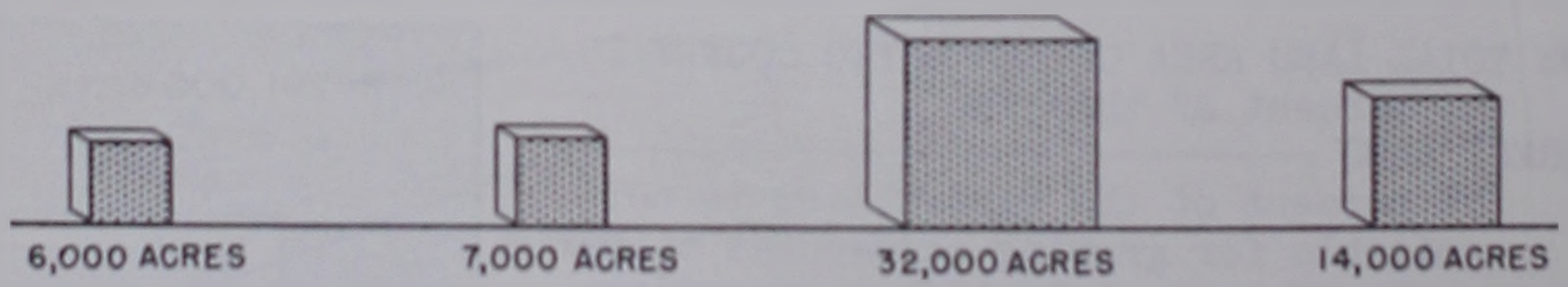
Ninety-one percent of the commercial forest land is privately owned, 7 percent is in State, county, and municipal ownership, and only 2 percent is federal. (table 1)

TYPES



The redwood type occupies a little more than four-fifths of the commercial forest land. Stands classified as Douglas-fir occur on the remaining area. (table 5)

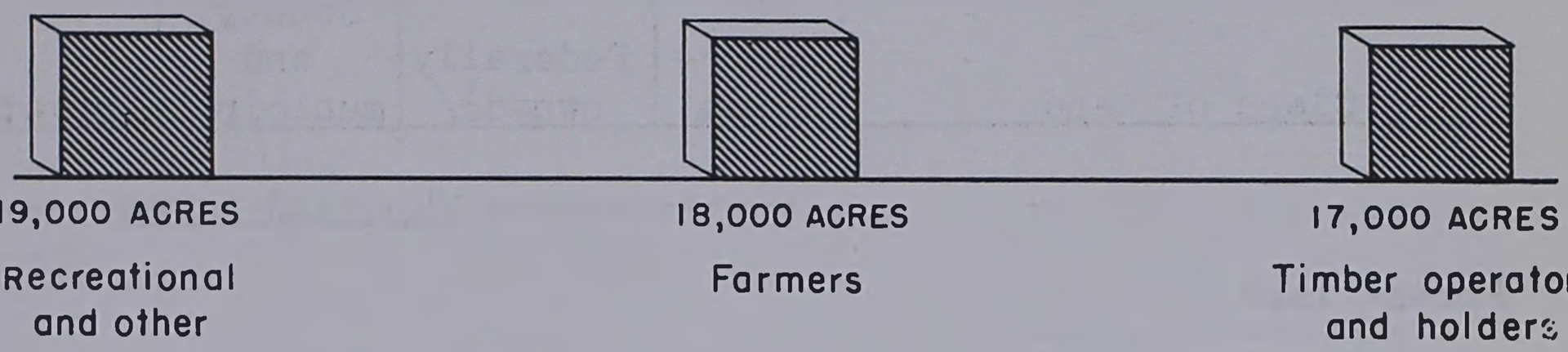
AGE CLASSES



Young growth stands occupy a little more than half of the commercial forest land area. Nearly a fourth is land non-stocked with commercial conifers. Twelve percent is in mixed stands of mature and immature timber in which immature timber is dominant. The remaining area is occupied by old growth stands. (table 7)

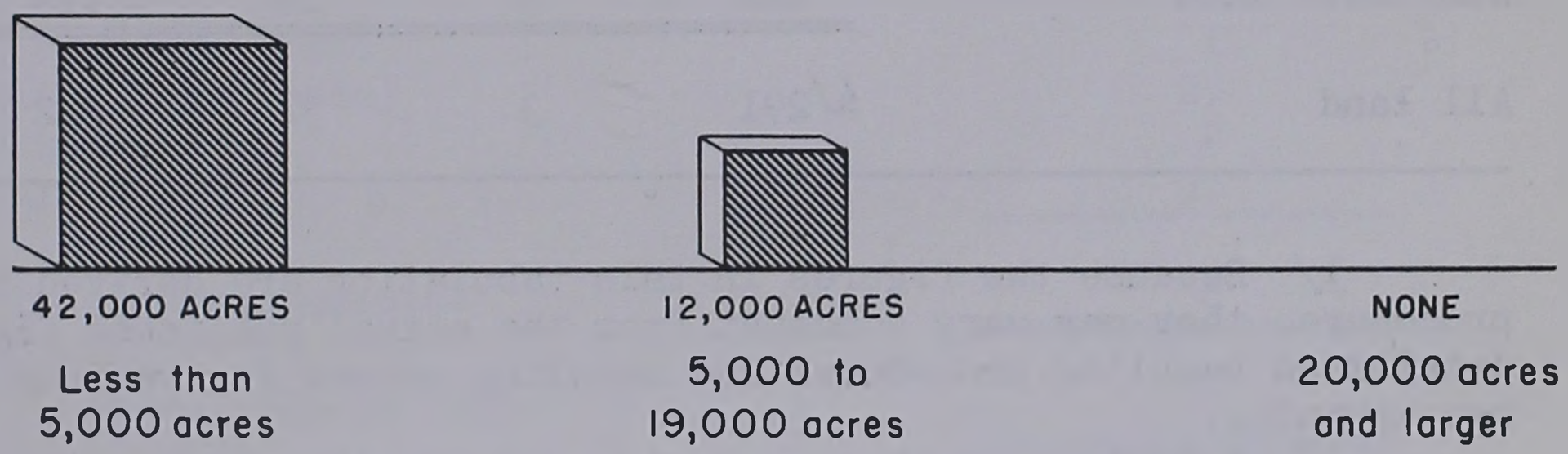
PRIVATELY OWNED COMMERCIAL FOREST LAND

TYPE OF OWNERSHIP



Owners of recreational, residential, and other similar properties have 35 percent of the privately owned commercial forest land. Farmers own 33 percent; and the remaining 32 percent belongs to corporations and individuals engaged in commercial logging and milling of timber or planning future operations. (table 3)

SIZE OF OWNERSHIP



A little more than three-fourths of the privately owned timberland is in small ownership holdings of less than 5,000 acres. The remainder is in ownership units ranging from 5,000 to 19,000 acres. There are no holdings of 20,000 acres and larger. (table 6)

Table 1.- Total land area by major classes of land and by ownership class, 1948

Class of land	Total all owner-ships	Federally owned[1]	State, County, and municipal	Private	Unclassified[2]
	---------- Thousand acres ----------				
Forest land					
Commercial	59	1	4	54	-
Noncommercial					
Reserved productive	3	-	3	-	-
Unproductive	65	1	15	49	(3/)
Total forest land	127	2	22	103	(3/)
Nonforest land	164	1	10	119	34
All land	4/291	3	32	222	34

1/ Because the figures in this tabulation are derived by sampling procedure, they may vary somewhat from the actual published figures. For details on sampling procedures and sampling errors for various area sizes see appendix.

2/ A portion of the county located outside the broad limits of commercial forest land and classified as agriculture and otherwise intensively developed land. Ownership aspects of this area were not considered essential to this study.

3/ Less than 500 acres.

4/ From "Areas of the United States 1940," U. S. Bureau of the Census.

Table 2.- Total land area by cover type and use, 1948

Cover type and use	Area Thousand acres
Commercial forest land	
Redwood	48
Douglas-fir	11
Total commercial	59
Noncommercial forest land	
Productive reserved	
Redwood	3
Unproductive	
Coniferous woodland	1
Woodland (hardwoods)	25
Woodland-grass	2
Chaparral	37
Total noncommercial	68
Total forest land	127
Nonforest	
Coastal sagebrush	13
Grass	53
Barren	1
Marsh	13
Cultivated, urban and industrial	84
Total nonforest land	164
All land	291

Table 3.- Number of ownerships and area of privately owned land by type of ownership, 1948

Type of ownership	Ownerships		Total land area		Commercial forest land	Non-commercial forest land	Non-forest land
	No.	Pct.	Thousand acres	Pct.	--- Thousand acres ---		
Timber operating company	3	0.3	13	5.8	13	(1/)	-
Timber holding company	2	0.2	1	0.5	1	(1/)	-
Timber operating individual	4	0.4	(1/)	-	(1/)	-	-
Timber holding individual	30	3.2	3	1.3	3	(1/)	-
Range livestock farming company	-	-	-	-	-	-	-
Range livestock farming individual	24	2.6	41	18.5	12	12	17
Other farmers	400	42.4	65	29.3	6	13	46
Recreational property owners	54	5.7	20	9.0	6	7	7
Other classified owners2/	426	45.2	50	22.5	12	15	23
Unclassified3/	-	-	29	13.1	1	2	26
All types	943	100.0	222	100.0	54	49	119

1/ Less than 500 acres.

2/ All other landowners whose classification is known but does not logically fit the classes listed above. Examples are owners of land held for residential purposes only, mining claims, reservoir sites, commercial enterprises, and speculation.

3/ Small urban, suburban, and industrial ownerships that are too small to map and classify properly, and ownerships that for other reasons cannot be classified and placed in appropriate categories.

Table 4.- Number of ownerships and area of privately owned land by size of ownership, 1948

Size of ownership	Ownerships		Total land area		Commercial forest land	Non-commercial forest land	Non-forest land
Acres	No.	Pct.	Thousand acres	Pct.	----- Thousand acres-----		
1- 179	779	82.6	40	20.7	7	8	25
180- 379	59	6.3	19	9.8	4	6	9
380- 699	51	5.4	38	19.7	9	14	15
700- 1,299	32	3.4	36	18.7	11	7	18
1,300- 2,599	14	1.5	25	13.0	4	6	15
2,600- 4,999	3	0.3	11	5.7	6	2	3
5,000- 9,999	3	0.3	12	6.2	7	1	4
10,000-19,999	2	0.2	12	6.2	5	3	4
20,000 and over	-	-	-	-	-	-	-
All classified ownerships	943	100.0	193	100.0	53	47	93
Unclassified	-	-	29	-	1	2	26
Total acreage	-	-	222	-	54	49	119

Table 5.- Commercial forest land by type of ownership and by timber type, 1948

Type of ownership	Total		Timber type	
			Redwood	Douglas-fir
	Thousand acres	Pct.	--- Thousand acres ---	
Federal	1	1.7	1	-
State, county, and municipal	4	6.8	1	3
Timber operating company	13	22.0	13	-
Timber holding company	1	1.7	1	-
Timber operating individual	(1/)	-	(1/)	-
Timber holding individual	3	5.1	3	-
Range livestock farming company	-	-	-	-
Range livestock farming individual	12	20.3	8	4
Other farmers	6	10.2	4	2
Recreational property owners	6	10.2	6	(1/)
Other classified owners	12	20.3	10	2
Unclassified	1	1.7	1	-
All types	59	100.0	48	11

1/ Less than 500 acres.

Table 6.- Privately owned commercial forest land by size of ownership and by timber type, 1948

Size of ownership	Total		Timber type	
			Redwood	Douglas-fir
Acres	Thousand acres	Pct.	--- Thousand acres ---	
1- 179	7	13.2	6	1
180- 379	4	7.5	3	1
380- 699	9	17.0	7	2
700- 1,299	11	20.8	10	1
1,300- 2,599	4	7.5	2	2
2,600- 4,999	6	11.3	5	1
5,000- 9,999	7	13.2	7	-
10,000-19,999	5	9.5	5	-
20,000 and over	-	-	-	-
All classified ownerships	53	100.0	45	8
Unclassified	1	-	1	-
Total acreage	54	-	46	8

Table 7.- Commercial forest land by type of ownership and by age class of timber, 1948

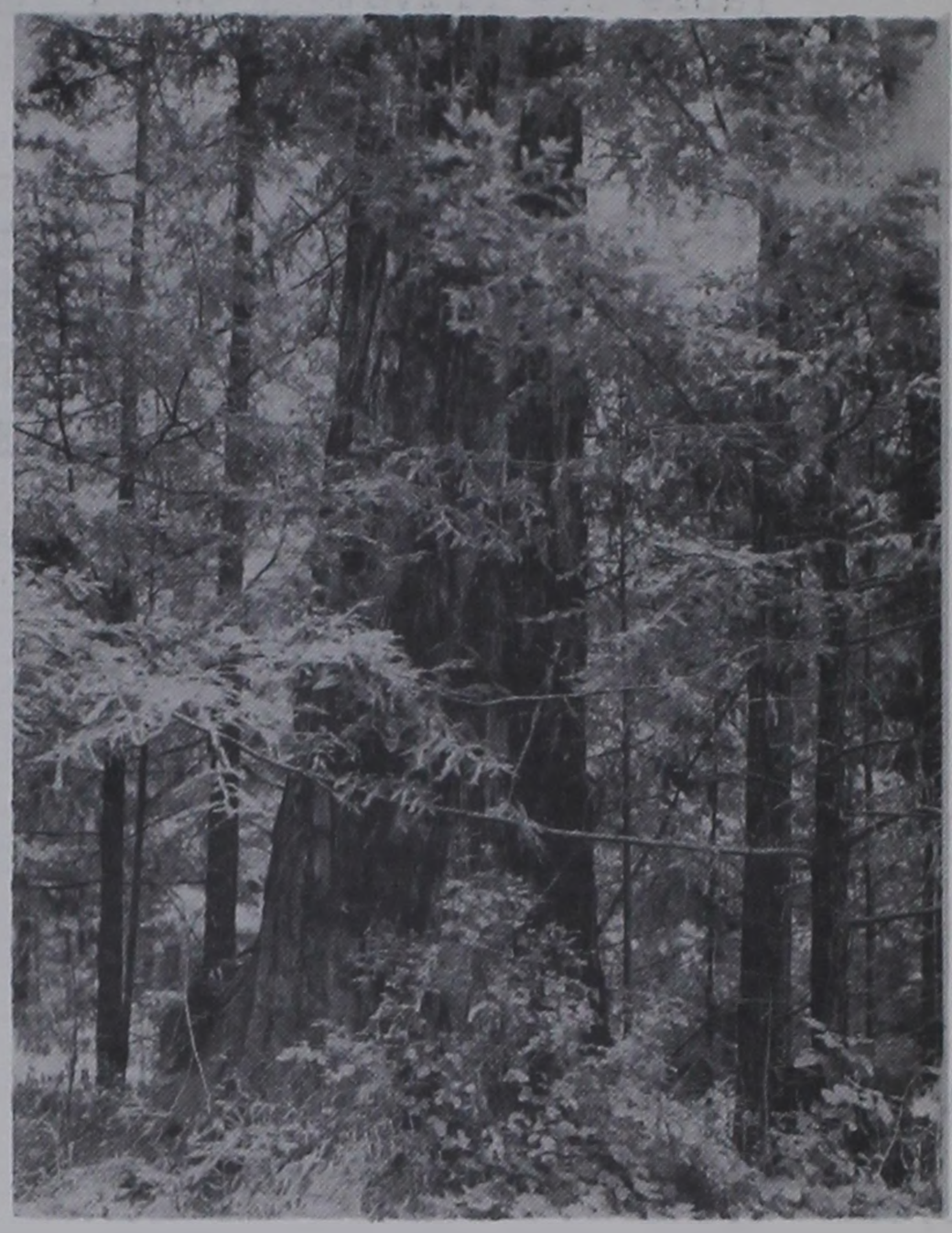
Type of ownership	Total	Age class					
		Old growth	Old growth-young growth	Young growth-old growth	Large young growth	Small young growth	Non-stocked 1/
	Thousand acres	Pct.	---------- Thousand acres ----------				
Federal	1	1.7	-	-	(2/)	1	(2/)	-
State, county, and municipal	4	6.8	(2/)	1	1	1	(2/)	1
Timber operating company	13	22.0	1	2	2	4	1	3
Timber holding company	1	1.7	-	1	(2/)	(2/)	-	-
Timber operating individual	(2/)	-	-	-	-	(2/)	-	-
Timber holding individual	3	5.1	-	1	-	1	1	(2/)
Range livestock farming company	-	-	-	-	-	-	-	-
Range livestock farming individual	12	20.3	-	-	2	8	(2/)	2
Other farmers	6	10.2	-	-	-	3	1	2
Recreational property owners	6	10.2	-	(2/)	1	4	(2/)	1
Other classified owners	12	20.3	-	-	1	6	-	5
Unclassified	1	1.7	-	-	-	1	-	(2/)
All types	59	100.0	1	5	7	29	3	14

1/ Commercial forest land nonstocked with commercial conifers but covered primarily with hardwoods and chaparral.

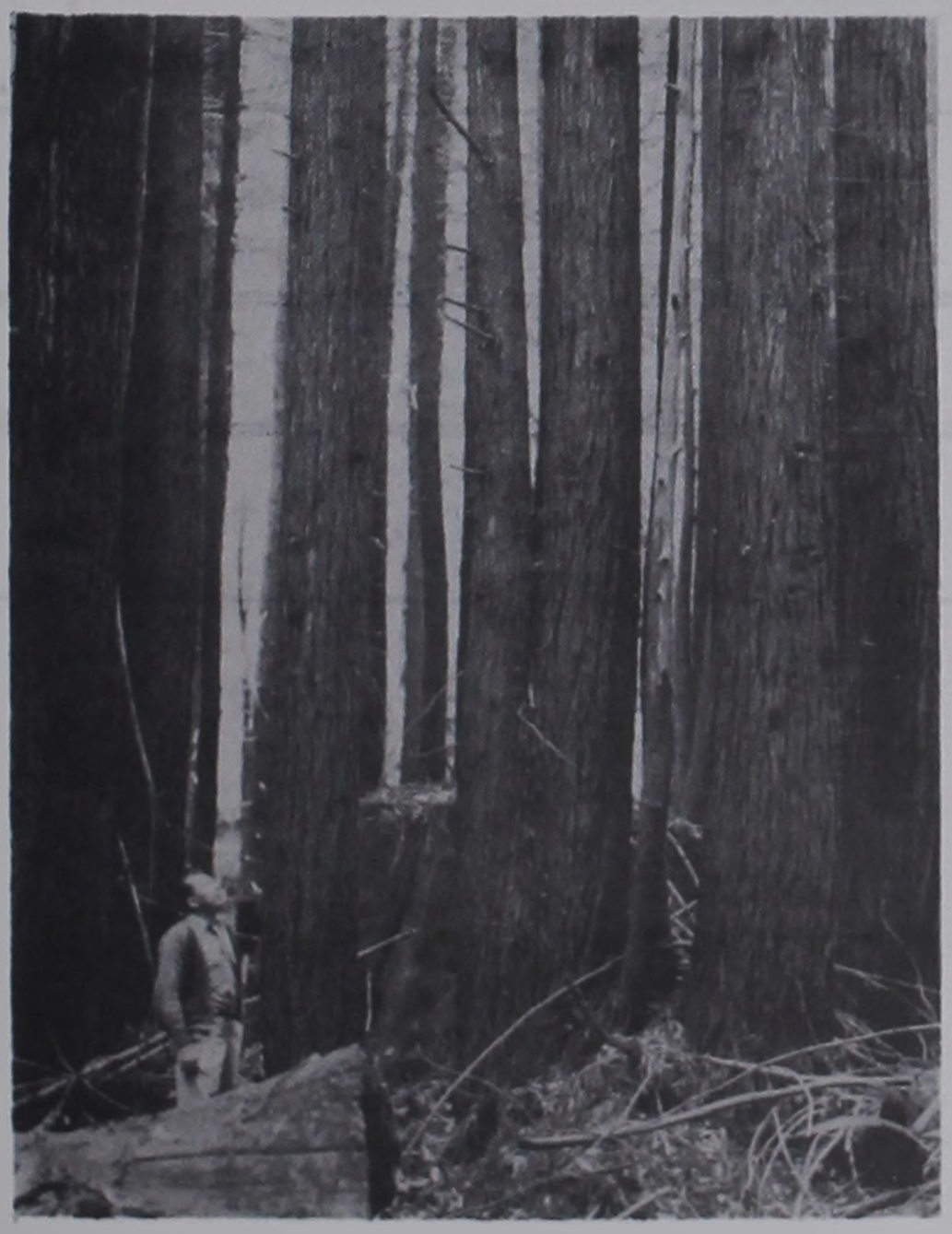
2/ Less than 500 acres.

AGE CLASSES OF TIMBER STANDS ON COMMERCIAL FOREST LAND

Old growth



Young growth - old growth



Large young growth

Small young growth

Table 8.- Privately owned commercial forest land by size of ownership and by age class of timber, 1948

Size of ownership	Total		Age class					
			Old growth	Old growth-young growth	Young growth-old growth	Large young growth	Small young growth	Non-stocked
Acres	Thousand acres	Pct.	---------- Thousand acres ----------					
1- 179	7	13.2	-	1	1	4	(1/)	1
180- 379	4	7.5	-	-	1	2	(1/)	1
380- 699	9	17.0	-	1	(1/)	5	1	2
700- 1,299	11	20.8	-	1	(1/)	6	(1/)	4
1,300- 2,599	4	7.5	-	-	-	-	1	3
2,600- 4,999	6	11.3	1	1	1	2	-	1
5,000- 9,999	7	13.2	-	-	2	3	1	1
10,000-19,999	5	9.5	-	-	1	4	(1/)	(1/)
20,000 and over	-	-	-	-	-	-	(1/)	(1/)
All classified ownerships	53	100.0	1	4	6	26	3	13
Unclassified	1	-	-	-	-	1	-	(1/)
Total acreage	54	-	1	4	6	27	3	13

1/ Less than 500 acres.

Table 9.- Commercial forest land by age class of timber and by density of stand, 1948

Age class	Total	Density of stand			
		Dense and semidense	Open	Very open	Non-stocked
	---------- Thousand acres ----------				
Old growth	1	1	-	-	-
Old growth-young growth	5	5	(1/)	-	-
Young growth-old growth	7	5	1	1	-
Large young growth	29	6	14	9	-
Small young growth	3	(1/)	(1/)	3	-
Nonstocked	14	-	-	-	14
Total	59	17	15	13	14

1/ Less than 500 acres.

Table 10.- Commercial forest land area by timber type, stand-size class, degree of stocking, and ownership, 1948

Timber type and stand-size class[1]	All areas			Degree of stocking[2] and ownership											
				Well-stocked			Medium-stocked			Poorly stocked			Nonstocked		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
	Thousand acres														
Redwood															
Old-growth saw timber	4	-	4	4	-	4	(3)	-	(3)	-	-	-	-	-	-
Young-growth saw timber	32	2	30	11	1	10	13	1	12	8	(3)	8	-	-	-
Pole timber	3	(3)	3	(3)	-	(3)	(3)	(3)	-	3	(3)	3	-	-	-
Nonstocked	9	(3)	9	-	-	-	-	-	-	-	-	-	9	(3)	9
Total	48	2	46	15	1	14	13	1	12	11	(3)	11	9	(3)	9
Douglas-fir															
Old-growth saw timber	2	2	-	2	2	-	-	-	-	-	-	-	-	-	-
Young-growth saw timber	4	(3)	4	(3)	-	(3)	2	(3)	2	2	-	2	-	-	-
Pole timber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	5	1	4	-	-	-	-	-	-	-	-	-	5	1	4
Total	11	3	8	2	2	(3)	2	(3)	2	2	-	2	5	1	4
All types															
Old-growth saw timber	6	2	4	6	2	4	(3)	-	(3)	-	-	-	-	-	-
Young-growth saw timber	36	2	34	11	1	10	15	1	14	10	(3)	10	-	-	-
Pole timber	3	(3)	3	(3)	-	(3)	(3)	(3)	-	3	(3)	3	-	-	-
Nonstocked	14	1	13	-	-	-	-	-	-	-	-	-	14	1	13
Total	59	5	54	17	3	14	15	1	14	13	(3)	13	14	1	13

1/ See relationship of stand-size class to age classes, page 16.

2/ To obtain degree of stocking, Survey density classes were converted as follows: dense and semidense -- well stocked; open -- medium stocked; and very open -- poorly stocked.

3/ Less than 500 acres.

PROCEDURES

Area Delineation

To determine the extent, location, and condition of all forest lands in San Mateo County, aerial photographs were delineated on the basis of (1) present cover of vegetation, (2) suitability for growing timber crops, and (3) age class and density of timber stands. The minimum unit classified and mapped was ten acres.

The segregation of lands suitable for growing timber crops from other lands was a matter of some difficulty, particularly where commercial conifers were entirely lacking. If these nonstocked areas were located in a timber zone where commercial conifers normally grow, they were classified as commercial forest land. While this assumption may be true in most cases, as verified by visible and historical evidence, soil surveys now in progress in other areas of California have demonstrated that some nonstocked areas have soils too shallow to grow timber. Inasmuch as the same situation probably exists in this county, some of the nonstocked areas classified in this report as commercial and reserved productive forest land must reside in the doubtful category until soil surveys provide a basis for final classification.

Transfer to base maps

After photo delineation was completed, Timber Stand Maps were prepared by transferring photo classifications to 7-1/2 minute quadrangle size base maps at a common scale of 2 inches to the mile. Kind and density of vegetation, age structure, and density of coniferous timber stands, and other information pertinent to the forest resource were shown. As a final preparation for area measurement other related information such as political and economic subdivisions, ownership, and commercial timber type boundaries, was marked along east-west transect lines spaced 2 miles apart. Because logging and fire have caused changes in the timber classification since the date of aerial photography, adjustments of age-density classes were made along these transect lines after a field examination. This was done so that class acreages when compiled would show conditions as of the inventory year.

Ownership determination

Information on land ownership in San Mateo County was obtained from the county tax assessment rolls, and other official records of the County Assessor and Tax Collector, using a line sampling technique.[1/] Ownership boundaries, taken from county plat maps, were marked along

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1/ Details of line sampling method used for estimating area and procedure for estimating number of owners are given in "A New Approach to Forest Ownership Surveys," by A. A. Hasel and Adon Poli, Land Economics, Vol. XXV, No. 1, Feb. 1949, pp. 1-10.

the transect lines drawn on the quadrangle base maps. The proportion of the total line traversing an ownership class was taken as the proportion of the total acreage in that particular class. This acreage was classified further by measuring the intercepts of the various classifications of vegetation and timber stands used in the Forest Survey.

Owners of properties traversed by the sample lines constituted the ownership sample. The property records of the county provided the address of the owners, and the acreage of each parcel of land in the sample. The acreage figures were used to classify private ownerships and land area by size. Each sample owner was mailed a questionnaire card by the State Division of Forestry. Answers on these cards provided information used to classify the sample ownerships as to type of ownership. Similar information about the land of nonrespondents was obtained by a field followup, in which key informants were questioned in local public offices and in the communities where the owners have their land.

Area measurement and compilation

To estimate areas, parallel lines spaced 2 miles apart were drawn east and west on the quadrangle base maps. Acreage figures were then obtained by recording line intercept measurements of all pertinent subdivisions along each sample line transecting the quadrangles. These subdivisions included age, density, and type of timber stands, and type and size of ownership. The ratio of total line length to total area for the quadrangle provided the factor to convert line segments in inches to area in acres. These acreages were then totaled by county, and adjusted if necessary, to check with the 1940 Bureau of Census acreages by counties. Estimated acreage figures appearing in the tables were compiled and summarized by means of punch cards and card tabulating equipment.

Stand-size class determination

The national pattern established for the Forest Survey requires classification of commercial forest land into stand-size classes. To present California forest resource data in terms of stand-size classes, mapped age classes have been grouped as follows:

Age class	Stand-size class
Old growth Old growth-young growth	Old growth saw timber
Young growth-old growth Large young growth	Young growth saw timber
Small young growth	Pole timber
Nonstocked	Nonstocked

The forest stands classified as saw timber by this grouping conform closely to the Forest Survey definitions. Areas of seedlings and saplings are not shown separately as these areas occurred in such small and widely scattered units that separate photo classification was not practicable. These areas were included with other stand-size classes, chiefly pole timber and nonstocked.

ACCURACY OF ESTIMATE

Estimates of acreages in the various classes of land as determined by Forest Survey procedures are subject to two general types of errors: (1) nonsampling errors in photo classification, mapping, tabulation, computation, and compilation, and (2) sampling errors which arise from taking a sample rather than making a complete inventory. Errors of the first type are kept to a minimum by frequent checking and close supervision of all field and office work. If these nonsampling errors are negligible or compensating, then the sampling errors provide measures of the reliability of the acreage estimates and can be computed by statistical methods. Magnitudes of the sampling errors depend on the intensity of the sample and the variability of the data.

For the principal classes of forest land of San Mateo County, the sampling errors2/ are as follows:

Class	Sampling error	
	Acres	Percent
Forest land	7,620	6.0
Commercial forest land	5,074	8.6
Noncommercial forest land	5,440	8.0

Statistics of forest area by age class, type, and ownership classes presented in this report are subject to increasing sampling errors as the class acreages decrease. A partial range of area sampling errors applicable to areas in this report is shown below:

Acres in class	Sampling error in percent
10,000	21.0
20,000	14.5
40,000	10.5
100,000	6.5
200,000	4.5

2/ For one standard error; that is, the chances are 2 in 3 that the class acreages as determined by 100-percent measurement lie within the limits of the calculated acreages plus and minus the amounts shown.

DEFINITION OF TERMS

Area

Forest land area. Includes (a) lands which are at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or of exerting an influence on the climate or on the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which have not been developed for other use; (c) afforested areas; and (d) chaparral areas.

Commercial forest land area. Forest land which is (a) producing or capable of producing usable crops of wood (usually saw timber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Noncommercial forest land area. Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order which otherwise qualifies as commercial forest land and (b) incapable of yielding wood products (usually saw timber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Chaparral land area. Lands supporting heavily branched dwarf trees or shrubs, usually evergreen, the crown cover of which normally covers more than 50 percent of the ground and whose primary value is watershed protection. The more common chaparral constituents are species of Quercus, Cercocarpus, Carrya, Ceanothus, Arctostaphylos, and Adenostoma. Types dominated by such shrubs as Artemisia, Opuntia, Purshia, Cutierrezia or semidesert species are not commonly considered chaparral.

Nonforest land area. Land that does not qualify as forest land. Includes land which has never supported forest growth; land from which the forest has been removed to less than 10 percent stocking and has been developed for other use, such as grazing, agricultural, residential, or industrial; all land in thickly populated urban and suburban areas; and water classified as land by the Bureau of Census.

Timber stand classifications

Age classes of commercial conifer stands[3] on commercial forest land.

1. Old growth. Mature trees[4] compose more than 80 percent of the conifer canopy.

2. Old growth-young growth. Mature trees compose from 50 to 80 percent of the conifer canopy.

3/ Stands composed of the following species, singly or in combination: Redwood and Douglas-fir.

4/ All trees that can be considered as having passed their optimum growth.

3. Young growth-old growth. Mature trees compose 20 to 50 percent of the conifer canopy.

4. Young growth. Mature trees compose less than 20 percent of the conifer canopy.

   a. Large young growth. More than 5 percent of the immature trees are larger than 11.0 inches d.b.h.

   b. Small young growth. Ninety-five percent or more of the immature trees are less than 11 inches d.b.h.

Stand-size classes of timber stands on commercial forest land.

1. Saw-timber stands. Defined as stands having a minimum net volume per acre of 4,000 board feet, International 1/4-inch rule, in saw-timber trees (11.0 inches d.b.h. and larger for all species).

   a. Old-growth saw-timber stands. Saw-timber stands in which over 50 percent of the net board-foot volume is in old-growth saw-timber trees.

   b. Young-growth saw-timber stands. Saw-timber stands in which 50 percent or more of the net board-foot volume is in young-growth saw-timber trees.

2. Pole-timber stands. Defined as stands failing to meet the saw-timber stand specification, but at least 10 percent stocked with pole-timber and larger trees and with at least half the minimum stocking in pole-timber trees (5.0 to 10.9 inches d.b.h.).

3. Seedling and sapling stands. Stands not qualifying as either saw-timber or pole-timber stands, but having at least 10 percent stocking of trees of commercial species and with at least half the minimum stocking in seedling and sapling trees (0 to 4.9 inches d.b.h.).

4. Nonstocked. Defined as areas of forest land not qualifying as saw-timber, pole-timber, or seedling and sapling stands.

Density classes of commercial conifer stands on commercial forest land.

1. Dense and semidense. Commercial conifers cover 50 percent or more of the ground space.

2. Open. Commercial conifers cover from 20 to 50 percent of the ground space.

3. Very open. Commercial conifers cover 5 to 20 percent of the ground space.

4. Nonstocked. Commercial conifers cover less than 5 percent of the ground space.

Timber type. An extensive area of commercial or reserved productive forest land characterized by a predominant conifer species or group of conifer species. Other vegetation (such as hardwood and chaparral areas) and/or nonvegetation types (such as barren areas) may also occur in subordinate amounts within the same area.

Commercial timber types

a. Redwood. Areas with redwood comprising 20 percent or more of the commercial conifer cover.

b. Douglas-fir. Areas with Douglas-fir comprising more than 80 percent of the commercial conifer cover; or mixtures of Douglas-fir and true fir in which Douglas-fir comprises 20 percent or more of the commercial conifer cover.

Other timber and vegetation types

a. Coniferous woodland. Areas with such trees as knobcone pine, digger pine, juniper, and scattered and scrub trees of other conifer species, covering more than 5 percent of the ground space and predominant over hardwoods that may partly compose the cover.

b. Hardwoods (woodland). Areas with hardwood trees (oaks, madrone, etc.), covering more than 50 percent of the ground except where in mixture with commercial conifers or herbaceous vegetation.

c. Woodland-grass. Areas with hardwood trees and herbaceous vegetation occurring in mixture--without commercial conifers--and the trees covering from 5 to 80 percent of the ground area and predominant over minor conifers5/ present in the cover.

d. Shrub and herb types consist of the following, where not in mixture with minor conifers or hardwood.

1. Chaparral. Areas with such shrubs as manzanita, ceanothus, scrub oaks, etc., covering more than 50 percent of the ground.

5/ Minor conifer species are knobcone pine, digger pine, juniper, western yew, and California nutmeg.

2. Coastal sagebrush. Areas with such shrubs as California sagebrush, coyote brush, and wild buckwheat covering more than 50 percent of the ground.

3. Grass. Areas with grasses and associated herbaceous vegetation covering more than 50 percent of the ground except where the type qualifies as woodland-grass.

4. Marsh. Areas with herbaceous vegetation characteristic of very poorly drained areas.

Nonvegetation types

a. Barren. Bare ground, rocky areas, river beds, mine dredgings, and talus essentially devoid of vegetation.

b. Cultivated, urban, and industrial. Areas that are under cultivation or are used for residential or industrial purposes.

Ownership classifications

Federal. Land owned by the Federal Government.

State, county, and municipal. Lands in State, county, or municipal ownership.

Timber operating company. A corporation actively engaged in commercial logging and sawing of timber as a major enterprise.

Timber holding company. A corporation holding timberland principally for future commercial timber operations. The timber may be held for the company's own future use or for sale to other operators.

Timber operating individual. A person whose major enterprise is commercial timber operations. This includes individuals logging timber, operating a large or small sawmill, or splitting timber commercially for sale.

Timber holding individual. A person holding timberland principally for future commercial timber operations. The timber may be held for his own future operations or for sale to other operators.

Range livestock farming company. A corporation engaged primarily in range livestock farming.

Range livestock farming individual. A person whose major enterprise is range livestock farming.

Other farmers. Persons or corporations that have farming as their major activity, but whose principal agricultural enterprise is not range livestock farming.

Recreational property owners. Persons or corporations holding land principally for recreational purposes.

Other classified owners. All other landowners whose classifications are known but do not logically fit the classes listed above. Examples are owners of land held for residential purposes only, mining claims, and reservoir sites.

Unclassified. Land ownerships in urban, suburban, and industrial settlements that are too small to map and classify properly, and ownerships that for other reasons cannot be classified and placed in appropriate categories.

FOREST SURVEY RELEASE No. 23

JULY 1954

U. S. DEPARTMENT
OF AGRICULTURE
FOREST SERVICE

CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
GEORGE M. JEMISON, DIR.

OUTPUT OF FOREST PRODUCTS IN CALIFORNIA, 1952

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Information on the output of forest products in California during the year 1952 has been compiled from several sources. These include the Bureau of the Census, U. S. Department of Commerce; the Western Pine Association; and surveys conducted by the California Forest and Range Experiment Station. The cooperation of other agencies and of company officials canvassed by the Station is greatly appreciated. Their aid has made this report possible.

Highlights

Lumber. Lumber production in California during 1952 remained at about the same level as in 1951 (table 1). The 1952 estimate is 4,837 million board feet, compared to 4,843 in 1951. The Redwood Region showed a 4 percent increase in 1952, but Pine Region production decreased 3 percent as compared with 1951.

Plywood Logs. Production of logs for green veneer and plywood plants was about 250 million board feet in 1952, an increase of 77 percent over 1950 (table 2). The volume of "peelers" was more than doubled in the Redwood Region but increased only slightly in the Pine Region.

Pulpwood. Production of logs for pulp plants amounted to almost 100 million board feet in 1952 -- equivalent to 200,000 cords and about twice the 1950 volume (table 2). The increase in pulp-log production was greater in the Redwood Region than in the Pine Region. Mill residues used for pulp were equivalent to about 110,000 cords in 1952 (table 6).

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iculture--Berkeley

Poles and Piling. About 45,000 poles were produced in 1952, or more than 3 times the number produced in 1950 (table 2). Both the Pine and Redwood Regions showed substantial increases. The Redwood Region, which had a negligible cut of poles in 1950, produced about one-third of the State total in 1952. More than a million lineal feet of piling were produced in 1952 -- about double the 1950 amount. Most of this increase occurred in the Pine Region.

Other Commodities. Production of logs and bolts for container veneer increased 13 percent in 2 years, to about 20 million board feet (table 2). All the increase was in the Redwood Region. Production of shingle and shake bolts amounted to more than 5 million board feet in 1952 -- a decrease of about 60 percent since 1950. This commodity has decreased almost to the vanishing point in the Pine Region. Production of cooperage logs was 4-1/2 million board feet in 1952, a decline of 14 percent since 1950. Cooperage logs are cut only in the Redwood Region.

Production by Species. Douglas-fir was the leading species by volume in 1952 for lumber, plywood and veneer, pulpwood, poles and piling, and cooperage. Ponderosa pine was the second most common species for lumber, plywood and veneer, and poles and piling. Redwood was third in importance for lumber, the chief species used for shingles, shakes, and various split products, and second in use as pulp logs. Production of lumber by species is shown in table 1, and other major products by species in tables 3 to 5 and 7 to 9 inclusive.

Procedure

Two regions have been designated for use in reporting forest product volumes in California. These are: (1) the Redwood Region, which includes the north coastal portion of the State, extending from Del Norte County through Monterey County; and (2) the Pine Region, which embraces the remaining counties of the State.

Lumber

Information on lumber production is collected and published annually by the Bureau of the Census, U. S. Department of Commerce, and by the lumber trade associations. Estimates for California for 1952 were obtained by combining the Census figure for the California Redwood Region with the Western Pine Association figure for the California Pine Region. The Pine Association figures were used for the Pine Region because they represented a more complete coverage of mills there than did those of the Bureau of the Census. The State Forester's report on sawlog output for California by counties in 1952 closely substantiates the Western Pine estimate in the Pine Region and the Census estimate in the Redwood Region.

Other Products

The figures for products other than lumber represent logs and bolts produced in 1952 for conversion into commodities during that year or for stockpiling until the following year, and were compiled by region of origin.

Figures on consumption and stocks of logs used at plywood plants were collected by the U. S. Bureau of the Census. Production estimates were derived from these figures, using supplementary information on peeler logs obtained by the Station, including figures on log consumption and stocks obtained from green veneer plants.

Production information on several other products was obtained by the Station, by means of mailed questionnaires, with follow-up in the field to obtain important unreported figures. Response was 100 percent from the pulp and cooperage plants. Response for other commodities was: container veneer, 94 percent of total estimated production; green veneer, 92 percent; poles, 98 percent; piling, 74 percent; shingles and sawed shakes, 16 percent of total estimated production.

Production estimates for the miscellaneous products shown in Table 10 were derived from figures obtained from key persons and companies in industry, from government agencies, and by projections of trends. Although some of these estimates are rough, they give a general idea of the current output of those products in California.

Table 1.- Lumber production in California by region and species, 1952; and by species, 1951

Species	1952[1]			1951[2]
	Pine region	Redwood region	California	Total California
	Million bd. ft.			
Douglas-fir	502.2	1,198.4	1,700.6	1,610.9
Ponderosa pine[3]	1,145.9	22.0	1,167.9	1,235.8
Redwood[4]	5.5	894.1	899.6	867.2
True firs[5]	636.6	15.0	651.6	705.2
Sugar pine	311.1	7.0	318.1	326.4
Cedar[6]	84.1	2.7	86.8	84.0
Sitka spruce	0.0	6.7	6.7	8.6
Other softwoods[7]	3.1	2.0	5.1	4.7
Hardwoods	0.5	0.1	0.6	0.3
All species	2,689.0	2,148.0	4,837.0	4,843.1

1/ Source: (1) Pine Region: Western Pine Association estimates for softwood production in California and Nevada combined, from which the Nevada production was deducted, the latter obtained from U. S. Forest Service Region 4; (2) Redwood Region: U. S. Bureau of the Census; (3) in both regions: hardwood and some softwood volumes were estimated at the California Forest and Range Experiment Station.

2/ Source: Bureau of the Census--Forest Service cooperative survey. See Forest Survey Release No. 17, California Forest and Range Experiment Station.

3/ Includes Jeffrey pine.

4/ Includes giant sequoia.

5/ White fir, California red fir, and grand fir.

6/ California incense-cedar, Port-Orford white-cedar, western red-cedar.

7/ Western white, lodgepole, and Digger pines in Pine Region; western hemlock and Monterey pine in Redwood Region.

Table 2.- Production of logs and bolts for commodities by region, California, 1952 and 1950

Commodity and region	1952 Volume	1950 1/ Volume	Percent change 1950 to 1952
	-- Thousand board feet 2/ --		
PLYWOOD 3/			
Redwood region	198,675	93,445	+113
Pine region	53,970	49,040	+ 10
Total both regions	252,645	142,485	+ 77
CONTAINER VENEER			
Redwood region	16,560	14,180	+ 17
Pine region	3,710	3,725	--
Total both regions	20,270	17,905	+ 13
PULP 4/			
Redwood region	84,810	39,645	+114
Pine region	15,026	9,195	+ 63
Total both regions	99,836	48,840	+104
SHINGLE AND SAWED SHAKE			
Redwood region	5,470	13,550	- 60
Pine region	220	1,290	- 83
Total both regions	5,690	14,840	- 62
COOPERAGE			
Redwood region	4,530	5,275	- 14
(None in Pine region)			
	-------- Pieces --------		
POLES (utility)			
Redwood region	14,850	280	+5204
Pine region	30,410	12,045	+ 152
Total both regions	45,260	12,325	+ 367
	------ Lineal feet -----		
PILING			
Redwood region	467,300	366,495	+ 28
Pine region	649,100	181,455	+ 257
Total both regions	1,116,400	547,950	+ 104

1/ From Forest Research Note No. 79, California Forest and Range Experiment Station, which also includes comparable figures for 1948 and 1946.
2/ In net scale, except pulp logs which are in gross scale.
3/ Includes logs going to both plywood and green veneer plants.
4/ In gross scale.

Table 3.- Estimated production of logs and bolts for plywood,1/ by species and region, California, 1952

Species	Redwood region	Pine region	State	
			Volume	Percent
	Thousand bd. ft.			
Douglas-fir	193,255	9,830	203,085	81
Ponderosa pine	85	36,070	36,155	14
Sugar pine	20	5,615	5,635	2
Redwood	5,300	--	5,300	2
True firs	15	2,455	2,470	1
All species	198,675	53,970	252,645	100
Number of plants				
Plywood	8	4	12	-
Green veneer	8	2	10	-
Total	16	6	22	-

1/ Peelers for both plywood and green veneer plants. The latter peel veneer, but have no presses, so ship their product to plants which press the veneer into plywood. The Bureau of the Census, U. S. Dept. of Commerce, provided basic data on consumption and stocks of logs by plywood plants. Some details from plywood plants and the information from green veneer plants were obtained by the Station.

Table 4.- Estimated production of logs and bolts for container veneer, by species and region, California, 1952

Species	Redwood region	Pine region	State	
			Volume	Percent
	Thousand bd. ft.			
Douglas-fir	16,170	--	16,170	80
Ponderosa pine	--	3,290	3,290	16
Digger pine	--	420	420	2
Sitka spruce	350	--	350	2
Monterey pine	40	--	40	--
All species	16,560	3,710	20,270	100
Number of plants	2	7	9	--

Table 5.- Estimated pulp log and bolt production by species and region, California - 1952

Species	Redwood region	Pine region	State	
			Volume	Percent
	--- Thousand bd. ft. gross scale[1] ---			
Douglas-fir	53,475	5,000	58,475	59
Redwood	31,110	--	31,110	31
True firs[2]	--	9,000	9,000	9
Pines[3]	225	1,000	1,225	1
Eucalyptus	--	26	26	--
All species	84,810	15,026	99,836	100

1/ A large portion of the logs used by the pulp industry are considered cull by the lumber industry, and by Forest Survey inventory standards.

2/ White fir and California red fir.

3/ Ponderosa, Jeffrey and lodgepole pines in the Pine Region; Monterey pine in the Redwood Region.

Table 6.- Total use of pulpwood in California, 1952

Kind of material	Plants reporting use	Common units	Equivalent in solid wood	Equivalent in cords
	Number		Thousand cu. ft.	Thousand cords
Logs and bolts	3	99,836 M bd.ft.[1]	17,971	200
Chips	6	34,103 units[2]	2,436	27
Wood flour[3]	4	21,006 tons	1,237	14
Mill ends[4]	5	70,614 cords	5,081	70
All kinds	7	--	26,725	311

1/ Gross scale.

2/ Units of 200 cubic feet of loose chips.

3/ Some of this volume is from out-of-state sources.

4/ Slabs, trimmings, veneer cores, etc., includes some chips not reported separately.

Table 7.- Estimated production[1/] of bolts for shingles and sawed shakes, by species and region, California, 1952

Species	Redwood region	Pine region	State	
			Volume	Percent
	------- Thousand bd. ft. ---------			
Redwood	5,470	--	5,470	96
Giant sequoia[2/]	--	150	150	3
Sugar pine	--	70	70	1
All species	5,470	220	5,690	100
Number of plants	30	6	36	--

1/ Based on returns of 12 identical mills which reported both in 1950 and in 1952 and estimates for active mills not reporting in 1952.

2/ Formerly designated "Bigtree."

Table 8.- Cooperage log production by species, California Redwood Region, 1952

Species	Volume	Percent
	M bd. ft.	
Douglas-fir	4,286	95
Sitka spruce	145	3
Redwood	96	2
Other[1/]	3	-
All species	4,530	100
Number of plants	1[2/]	-

1/ Sugar pine, 2M; grand fir, 1M.

2/ Permission to publish these figures has been granted by the producer.

Table 9.- Estimated production of poles and piling, 1/ by region and species, California, 1952

Region	Species	Poles 2/		Piling 2/	
		Pieces	Cu. ft.	Lin ft.	Cu. ft.
Redwood region	Douglas-fir	14,850	400,770	308,200	196,280
	Redwood	--	--	141,300	122,180
	Eucalyptus	--	--	17,800	10,870
	Subtotal	14,850	400,770	467,300	329,330
Pine region	Douglas-fir	14,210	355,480	201,900	128,590
	Ponderosa pine	16,200	262,350	439,000	279,620
	Eucalyptus	--	--	8,200	5,010
	Subtotal	30,410	617,830	649,100	413,220
State	Douglas-fir	29,060	756,250	510,100	324,870
	Ponderosa pine	16,200	262,350	439,000	279,620
	Redwood	--	--	141,300	122,180
	Eucalyptus	--	--	26,000	15,880
	All species	45,260	1,018,600	1,116,400	742,550

1/ Four California producers reported for 1952, 2 reporting production of both poles and piling, and 2 reporting one product each. Estimates have been made to cover the few small non-reporting producers.

2/ Cubic volumes for poles and piling are based on average measurements reported with production figures. The range in measurements or averages were as follows:

Product and species	Top diameter	Butt diameter	Length
	inches	inches	feet
POLES			
Douglas-fir	6 - 9	10 - 17	40 - 50
Ponderosa pine	6 - 9	9 - 17	25 - 35
PILING			
Douglas-fir	7 - 8	13 - 14	50 - 60
Ponderosa pine	8	13	50
Eucalyptus	6	14	60
Redwood (1950 data)	8	16	35

Table 10.- Estimated output of miscellaneous forest products, California, 1952 and 1950

Product	Unit	Volume	
		1952	1950
Fuelwood (residential and farm use)	Cords	170,000	245,000 1/
Round wood	Cords	70,000	105,000
Slab wood 2/	Cords	100,000	140,000
Fenceposts (round and split)	M pieces	3,400	3,100
Hewn ties (redwood)	M pieces	8	35 1/
Miscellaneous split products (primarily grapestakes)	M pieces	9,800	9,000
Mine timbers (round and hewn)	Cubic feet	455,000	337,700
Tan-oak bark	Cords	5,086	8,000

1/ Revised downward from earlier estimates.

2/ Residues from sawmills, etc.